

COMPOSITIONS AND METHODS OF CROP PROTECTION

This application is a continuation-in-part of U.S. Patent Application Serial No. 10/419,882, filed April 22, 2003, now U.S. Patent No. 6,926,901, which is a continuation-in-part of U.S. Patent Application Serial No. 09/735,071, filed December 12, 2000, now U.S. Patent No. 6,565,867.

FIELD OF THE INVENTION

The invention is directed to animal repellent compositions containing synthetic and plant-derived toxins including for example, alkaloids isolated from botanical specimens of the family Amaryllidaceae including for example from the genus Narcissus; and other moieties including for example cycad extracts, useful for repelling unicellular and multicellular animals from materials including vegetation including flowers, plants, vines, food crops, bulbs, seeds, nuts, fruits, bushes and trees. These compositions may optionally include one or more other agents, including for example, bioerodible polymers, biochemicals, and/or permeation enhancers. The compositions can be topically applied to the desired material and/or the desired material can be permeated with the composition. Methods of application include, for example, coating, directly spraying, dip coating, spray coating, painting on, impregnating, soaking, vacuum deposition, or electrostatic coating and electrolytic diffusion. The inventive compositions are effective in repelling organisms including animals such as animals that disturb vegetation, for example animals that eat, gnaw, or sense vegetation, e.g., deer, voles, moles, ground hogs, mice, rats, rodents, raccoons, the Avera sub phylum including the class, order and phylum of Mollusca Gastropoda, nematodes, larvae, worms, and insects.